Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for providing authentication in a virtual private network having an AAA server, the method comprising:

receiving a request from a remote user for connection with a virtual private network at a virtual home gateway;

associating the remote user with the virtual private network;

sending a request to authenticate the remote user from the virtual home gateway to the AAA server located within said virtual private network; and

connecting the remote user to the virtual private network if the AAA server authenticates the user.

Claim 2 (original): The method of claim 1 wherein associating the remote user comprises receiving a virtual private network ID and address of an AAA server of the virtual private network.

Claim 3 (original): The method of claim 2 wherein the virtual private network ID binds a profile of the virtual private network to a routing table of the virtual home gateway.

Claim 4 (original): The method of claim 1 wherein associating the remote user comprises sending a request to a service provider AAA server to authorize the remote user.

Claim 5 (original): The method of claim 4 wherein the service provider AAA server contains the address of the virtual private network's AAA server.

Claim 6 (original):   The method of claim 1 wherein sending a request to authenticate the remote user comprises routing the request using a customer routing table of the virtual private network.

Claim 7 (original):   The method of claim 1 wherein connecting the remote user to the virtual private network comprises setting up a PPP session for the remote user.

Claim 8 (original):   The method of claim 1 further comprising sending an accounting request to the virtual private network's AAA server.

Claim 9 (original):   The method of claim 8 further comprising sending an accounting request to the service provider's AAA server.

Claim 10 (currently amended): The method of claim 9 wherein accounting information sent to the virtual private network's AAA server is different than ~~the~~ accounting information sent to the service provider's AAA server.

Claim 11 (original):   The method of claim 1 wherein associating a remote user with the virtual private network comprises identifying the virtual private network based on a domain name.

Claim 12 (original):   The method of claim 1 wherein associating a remote user with the virtual private network comprises identifying the virtual private network based on a dial-up phone number.

Claim 13 (original):   The method of claim 1 wherein associating a remote user with the virtual private network comprises identifying the virtual private network based on a circuit ID.

Claim 14 (currently amended):   A computer program product for providing authentication in a virtual private network having an AAA server, the product comprising:

code that receives a request from a remote user for connection with a virtual private network at a virtual home gateway;

code that associates the remote user with the virtual private network;

code that sends a request to authenticate the remote user from the virtual home gateway to the AAA server located within said virtual private network;

code that connects the remote user to the virtual private network if the AAA server authenticates the user; and

a computer-readable storage medium for storing the codes.

Claim 15 (original):   The product of claim 14 further comprising code that requests a service provider AAA server to authorize a remote user.

Claim 16 (original):   The product of claim 14 further comprising code that sends accounting requests to the virtual private network AAA server.

Claim 17 (original):   The product of claim 14 further comprising code that binds a profile of the virtual private network to a routing table of the virtual home gateway.

Claim 18 (currently amended):   A system for providing authentication in a virtual private network having an AAA server, the system comprising:

a virtual home gateway configured to receive requests from a remote user for connection with a virtual private network, send a request to authenticate the remote user to the AAA server located within of the virtual private network, and connect the remote user to the virtual private network;

a database for storing addresses of virtual private network AAA servers; and

a processor operable to look up the address of the virtual private network AAA server based on information received from the remote user.

Claim 19 (original):   The system of claim 18 wherein the information received from the remote user is a circuit ID.

Claim 20 (original):   The system of claim 18 wherein the information received from the remote user is domain name.

Claim 21 (original):   The system of claim 18 wherein the information received from the remote user is a dial-up phone number.

Claim 22 (original):   The system of claim 18 further comprising a service provider AAA server coupled to the virtual home gateway and configured to authorize the remote user.

Claim 23 (original):   The system of claim 18 wherein the database includes virtual private network IDs used to bind virtual private network profiles to a routing table of the virtual home gateway.

Claim 24 (original):   The system of claim 23 wherein the virtual home gateway comprises a plurality of routing tables corresponding to different virtual private networks.

Claim 25 (currently amended): A system for providing authentication in a virtual private network having an AAA server, the system comprising:

means for receiving a request from a remote user for connection with a virtual private network at a virtual home gateway;

means for associating the remote user with the virtual private network;

means for sending a request to authenticate the remote user from the virtual home gateway to the AAA server located within the virtual private network; and

means for connecting the remote user to the virtual private network if the AAA server authenticates the user.

Claim 26 (previously presented): The system of claim 25 wherein means for associating the remote user comprises means for receiving a virtual private network ID and address of an AAA server of the virtual private network.

Claim 27 (previously presented): The system of claim 25 wherein means for associating the remote user comprises means for sending a request to a service provider AAA server to authorize the remote user.

Claim 28 (previously presented): The system of claim 27 wherein the service provider AAA server contains the address of the virtual private network's AAA server.